Purpose and Applicability of Regulations

The potential to adversely affect human health and the environment is always present when using, storing, and transporting regulated materials. Consequently, numerous regulations have been created to prevent accidents and reduce the risk of exposure to regulated materials. Complying with these regulations will minimize your liability and protect your employees, the community, and the environment. Following is only a summary of the requirements. You will need to refer to the regulations for specific information.

These regulations only apply to interstate and intrastate transportation of hazardous waste and do not apply to on-site transporting by generators or treatment, storage, and disposal facilities.

Agencies and Their Laws and Rules

Indiana Department of Transportation

The Indiana Department of Transportation enforces:

- Title 327, Article 2, Rule 10, Section 1 of the Indiana Administrative Code (327 IAC 2-10-1), which provides requirements for secondary containment of hazardous materials; and
- Title 49 of the Code Federal Regulations, parts 100-177, which regulates the transportation of hazardous materials in the United States. This includes biological, radioactive, and chemically hazardous materials and waste.

INDOT staff can be reached at (317) 232-5533. INDOT's Web address is www.indot.IN.gov.

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency monitors oil storage under the Spill Prevention, Control, and Countermeasure requirements. U.S. EPA enforces Title III of the Superfund Amendments and Reauthorization Act which requires that hazardous material inventory information be submitted to state and local agencies (see Chapter 7). In addition, U.S. EPA monitors polychlorinated biphenyls (PCBs) under the Toxic Substances Control Act and the regulations found in 40 CFR 761.

U.S. Department of Transportation

The U.S. Department of Transportation enforces regulations that pertain to inter- and intra-state transportation of hazardous materials under authority of the federal Hazardous Materials Transportation Act and Title 49 of the Code of Federal Regulations.

Local Agencies

In addition to the above, there may be other local ordinances and insurance company requirements that you must follow. Contact your local building official and fire department for questions concerning the fire code, specific secondary containment requirements, and local reporting requirements.

Secondary Containment

One way to reduce the damage caused by chemical releases is to control their impact to air, ground water, surface water, and drains. This can be done by rapid excavating or using items and devices such as absorbents or block drains. Some regulations require secondary containment structures to control releases, depending on what is being stored.

Even if you are not required by law to have secondary containment, you are encouraged to use it for all materials that, if released, may pose a risk to human health and the environment. You can consider purchasing prefabricated containment units or fabricated units built to your specifications. Many environmental regulations do not specify how these structures must be built, only that they keep the material from reaching surface water and ground water. The regulations also contain general requirements, such as the containment must be compatible with, and impervious to, the contained material.

The volume that secondary containment structures must be able to hold varies with the type of substance stored. If the regulations do not specify a greater amount, it is generally acceptable that the containment area be designed to hold, at a minimum, the greater volume of either 10 percent of all the container volumes, or 100 percent of the largest container volume, plus any precipitation that may accumulate in the area.

Examples of secondary containment structures include:

- Curbing;
- Dikes, berms, or retaining walls;
- Drip pans;
- Enclosed cabinets with sealed flooring;
- Portable containment units;
- Spill diversion and retention ponds for larger areas; and
- Weirs, booms, or other barriers.

Consider the following when selecting or designing a structure:

Structural strength

- The containment should be capable of supporting the weight of the loads placed on it, including the materials and equipment that will enter the area.

Impermeability

- The structure should be impermeable so that the containment is resistant to penetration of the materials contained in the structure. For example, an area storing acids or corrosives should not be a concrete area, unless the concrete has been sealed with a coating that makes it resistant to the chemicals.

Compatibility

- The construction materials should be compatible with the substances contained in the structure. Also, the structure's design should provide separation areas for incompatible substances.

Integrity

- There should be no drains, other piping, or openings of any kind where liquids may escape. For example, seal all joints and cracks, do not include floor drains in the area, and do not use cinder blocks in the construction.

Security

- The structure should be secured to prevent vandalism and the entry of unauthorized persons to the area. The containment must allow emergency personnel and equipment to enter. Sumps included in the design should be manually controlled.

Protection from extreme temperatures

- The structure should be protected from extreme temperatures, including ignition sources.

Squirt distance control

- The squirt distance should be controlled to contain any liquids spurting from containers if a leak occurs.

Other things to consider when designing your secondary containment area include:

- Avoid creating confined spaces;
- Provide adequate lighting and ventilation;
- Maintain required isolation distances from property lines, public ways, and buildings; and
- Determine how employees will move materials in and out of the area.

Transportation, Shipping and Receiving of Hazardous Materials

Hazardous Material Transporters

The U.S. Department of Transportation defines a hazardous material as a substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, which includes hazardous waste. Hazardous materials may pose varying degrees of risk in transportation, depending on the type of substance. Transporters of hazardous goods must be aware of how these materials are classified to ensure compliance with marking, labeling, placarding, and shipping paper requirements. Hazardous materials may be classified as any of the following: explosives, gases, flammable liquids, flammable solids, oxidizing substances, poisons and infectious substances, radioactive material, corrosives, miscellaneous goods, and other regulated materials.

A table of hazardous material classes and an index to class definitions are included in 49 CFR 173.2. If the commodity you are transporting is included in one of the classifications identified, you are subject to U.S. DOT's hazardous materials regulations. Another table of hazardous materials is contained in Title 49 CFR 172.101. This table is more detailed and lists proper shipping names and class/division numbers, and provides guidance for the packaging and handling of specific hazardous materials. It is available at ecfr.gpoaccess.gov.

Standards applicable to transporters of hazardous waste within the United States require the use of a manifest form if the material being transported is hazardous under 40 CFR Part 262. U.S. EPA has expressly adopted certain regulations of U.S. DOT governing the transportation of hazardous materials to satisfy its statutory obligation to promulgate regulations to protect human health and the environment in the transportation of hazardous waste. Adopting U.S. DOT's regulations ensures consistency and avoids duplicative or conflicting requirements. These regulations include:

- 49 CFR 172.101;
- 49 CFR 172.400 (labeling);
- 49 CFR 172.500 (placarding);
- 49 CFR 172.600 (emergency response information);
- 49 CFR 172.700 (training requirements); and
- 49 CFR 173 (general shipping and packaging requirements).

Also included are standards for shipping, packaging, and labeling waste (49 CFR 172); emergency response, Subpart G; and Training, Preparation of Hazardous Materials for Shipment, Subpart H. According to these regulations:

- Wastes must be segregated and classified according to the applicable U.S. DOT hazard class;
- Known chemicals must be packaged according to U.S. DOT guidelines as specified in 49 CFR 173.12;

- Unknown or unlabeled wastes must be identified in order to classify and package the waste according to the appropriate hazard class;
- Waste must be transported on properly licensed and placarded vehicles according to the appropriate hazard class; and
- Waste must be disposed of or recycled at a Resource Conservation and Recovery Act-approved facility.

Liability of Improper Shipments of Hazardous Materials

Compliance with the hazardous materials regulations is the responsibility of both the shipper and carrier.

General shipper responsibilities are contained in 49 CFR Part 173. In many cases, shipper and carrier responsibilities overlap. Although both the shipper and the carrier can perform the task, the carrier is ultimately liable. 49 CFR Part 387 establishes the insurance requirements for vehicles transporting certain amounts of hazardous materials. Both Indiana and federal law require the carrier to maintain proof of financial responsibility on the federal form, Endorsement for Motor Carrier Policies of Insurance for Public Liability Under Sections 29 and 30 of the Motor Carrier Act of 1980. Additionally, both carriers and shippers must properly train their employees, as required in 49 CFR 172.

Hazardous Materials Registration Program

The hazardous materials regulations require registration for each person that offers or transports any shipment of hazardous materials that requires placarding (with an exception for farmers offering or transporting hazardous materials in direct support of their farming activities). Currently the annual registration fee is $275 for each person meeting the U.S. Small Business Administration's size standard for a small business and $1,000 for each person that does not meet those standards. Information about the U.S. DOT's Hazardous Materials Registration Program, including the registration statement (U.S. DOT F 5800.2) and instruction booklet can be found at http://hazmat.dot.gov/regs/register/register.htm.

You may also call the Hazardous Materials Registration Program at (202) 366-4109 to receive instructions on how to register and obtain the Hazardous Materials Registration Statement (U.S. DOT F 5800.2).

Shipping Papers

Stipulations for hazardous materials shipping papers are contained in 49 CFR 172, Subpart C. According to the hazardous materials regulations, a shipping paper is any shipping document that communicates a hazard and conforms to the requirements contained in the subpart.

Essentially, all shipping papers must have four elements, referred to as a basic shipping description:

1. Proper shipping name;
2. Hazard class/division;
3. Identification number; and
4. Packaging group (a grouping according to the degree of danger presented by hazardous materials – I, II, or III).

All this information is provided in the Hazardous Materials Table contained in 49 CFR 172.101. When preparing your shipping papers, the basic shipping description must be entered in the order shown above.

In addition to the basic shipping description, shipping papers may also contain the following:

- The total quantity transported;
- Shipper certification (certifies materials being transported are in compliance with regulations); and
- Emergency response telephone number and response information; specific requirements pertaining to this information are outlined in 49 CFR 172.602–49 CFR 172.603.

The Emergency Response Guidebook is a reference guide that identifies the proper response procedures that should be taken in the event of a hazardous materials spill or accident. It also lists specific and generic hazards associated with a particular material. The guidebook is available at http://hazmat.dot.gov/pubs/erg/gydebook.htm.

Depending on the material being transported, there may be additional requirements, which are contained in 49 CFR 172.203. In addition, the Federal Hazardous Materials Transportation Law requires that shipping papers (in paper or electronic form) be retained for a period of two years after the shipping paper is provided to the carrier.

Marking of Containers

Markings are placed directly on the outer packaging of hazardous materials to identify the contents inside. The marking will provide a descriptive name, identification number, specifications, plus any required instructions and/or cautions.

The provisions for marking packages are contained in 49 CFR 172, Subpart D. The basic marking requirement consists of the proper shipping name (e.g., Ethyl Alcohol) and the identification number of the hazardous material contained in the package. This information is provided in the Hazardous Materials Table contained in 49 CFR 172.101.

Depending on the material, there may be additional marking requirements. Empty container exceptions, as well as information on authorized abbreviations; bulk packaging;

liquid hazardous materials; and marking requirements for explosives, poisonous, and other regulated materials can all be found in 49 CFR 172, Subpart D.

Labeling of Containers

A label is a prescribed hazard warning notice that is applied to the outside of shipping containers of hazardous materials. Labels identify the primary and subsidiary hazards specific to materials, and may give information about handling precautions and prohibitions as well.

If you are transporting hazardous materials, the containers must be labeled accordingly. General labeling requirements are contained in 49 CFR 172, Subpart E. A table that identifies proper labeling specifications for each hazardous material class and division can be found in 49 CFR 172.400. Other sections in Subpart E address authorized label modifications, label placement, and specifications. 49 CFR 172, Subpart E provides a separate section for each authorized label and gives a description and an example of the label.

Placarding of Carrier's Vehicle

Placards are displayed on each end and each side of a carrier and are used to communicate the hazard to industry personnel, the general public, and first responders. Unless the regulations tell you differently, each person who offers or transports a regulated hazardous material must comply with the placarding requirements.

General placarding requirements are contained in 49 CFR 172, Subpart F. Placard specifications for each hazardous material class and division are located in 49 CFR 172.500–49 CFR 172.560.

When evaluating placarding requirements you should be familiar with two classification tables, referred to as Table 1 and Table 2, located in 49 CFR 172.504. These tables identify when a carrier must be placarded.

With the exception of the materials listed above, a placard is not required for materials if the aggregate gross weight does not exceed 1,000 pounds, unless:

- The material is in a package that meets the definition of a bulk package. A bulk package is defined as a single container with: (1) capacity greater than 119 gallons as a receptacle for a liquid; (2) a net mass greater than 882 pounds and a capacity greater than 119 gallons as a receptacle for a solid; or (3) a water capacity greater than 1,000 pounds as a receptacle for a gas.

  OR

- The material has a mandatory subsidiary hazard placard requirement (see 49 CFR 172.505). Subsidiary hazards that require a placard include: (1) Poison Inhalation Hazards; (2) Dangerous When Wet; and (3) Radioactive materials with a corrosive subsidiary. All other subsidiary hazards may be placarded, but it is not required.

Empty, non-bulk packages containing only the residue of a hazardous material do not have to be placarded. Neither do containers that are cleaned and purged or refilled with a non-hazardous material.

Additional information on placard applicability, placement, specifications, and other requirements can be found in 49 CFR 172, Subpart F.

Loading and Unloading – Compatibility and Packaging of Hazardous Materials

Regulations pertaining to the loading and unloading of hazardous materials to and from a motor carrier are contained in 49 CFR 177, Subpart B. The regulations in 49 CFR 177, Subpart B identify the general unloading and loading regulations that apply to all hazardous materials transportation and specific regulations that pertain to the unloading and loading of a particular class or division of hazardous material.

Storage of Polychlorinated Biphenyls (PCBs)

Manufacturers are subject to federal regulations (Title 40, Part 761 of the Code of Federal Regulations) if they have or handle regulated amounts of PCBs or if a device is leaking PCBs. Regulations apply to the manufacture, processing, distribution in commerce, marking, use, storage, and disposal of PCBs. There are different requirements based on the following PCB concentration levels:

- < 50 parts per million (ppm) (or for contaminated surfaces, < 10 micrograms/100 cm^2);
- 50 ppm to < 500 ppm (or > 10 micrograms/100 cm^2 (or for contaminated surfaces, < 100 micrograms/100 cm^2); and
- > 500 ppm (or for contaminated surfaces, > 100 micrograms/100 cm^2).

Since these rules are too numerous to include in this publication, the following only summarizes how to identify PCBs and mentions a few requirements.

Identifying PCBs

PCBs can be found in liquid, non-liquid, and a combination of liquid and non-liquid forms. Usually this chemical can be found in electrical equipment or may be a byproduct of the manufacturing process. (See the definitions for "excluded manufacturing process" and "excluded PCB products" in the regulations to determine if any

PCB Trade Names	
• Abestol	• Chlorextol
• Inerteen	• Pyralene
• Aroclor	• DK
• Kennechlor	• Pyranol
• Askarel	• EEC-18
• No-Flamol	• Saf-T-Kuhl
• Chlophen	• Fenclor
• Phenoclor	• Solvol

exclusions apply to your PCB waste.) PCBs may be found in dielectric fluids, solvents, oils, hydraulic fluids or other heat transfer fluids, paints or coatings, sludges, slurries, and other chemical substances. PCBs were marketed under various trade names (see table on page 118). For additional information on how to identify PCBs, visit U.S. EPA's Web site at www.epa.gov/pcbs.

You may do any of the following to determine if you have regulated PCB concentrations:

- Look at the equipment label or nameplate for the words "No PCBs" or "PCBs" or any of the PCB trade names. If the nameplate is not readable, you may want to check with the equipment manufacturer for documentation as to the PCB concentration.
- Review service records or other documentation that indicates the PCB concentration of all fluids used since the article was first manufactured. You may need to check with your utility company to see if they have any records regarding the PCB concentration.
- Have the equipment tested.
- If you do not have documentation or have not had tests conducted that identify the PCB level, you may use the following assumptions regarding PCB concentrations for use or storage for reuse. You will need to know the actual concentration at the time of disposal.
    - Transformers and capacitors with < three pounds of fluids, circuit breakers, reclosers, oil-filled cable, and rectifiers can be assumed to contain less than 50 parts per million (ppm).
    - Mineral-oil filled electrical equipment manufactured before July 2, 1979 contains > 50 ppm to < 500 ppm PCBs. If the date of manufacture is unknown, assume it is PCB-contaminated.
    - Transformers manufactured before July 2, 1979 that contain three pounds or more of fluid other than mineral oil contain > 500 ppm PCBs. If the date of manufacture is unknown, assume it is a PCB-contaminated transformer.
    - Capacitors manufactured before July 2, 1979 contain > 500 ppm PCBs. Assume any capacitors manufactured after that date are non-PCB contaminated. If the date of manufacture is unknown, assume it contains > 500 ppm PCBs.
    - For any electrical equipment manufactured after July 2, 1979, assume it is non-PCB contaminated.

You must label specific items with the applicable mark that identifies them as containing PCBs. See 40 CFR Part 761, Subpart C regarding these requirements.

General Record Keeping and Reporting Requirements

As of February 5, 1990, owners or operators of facilities other than commercial PCB storage and disposal facilities that use or store the following PCB items must maintain annual records (manifests, certificates of disposal, and inspection and cleanup records) and prepare an annual document log if they have or do any of the following:

- Use or store at any one time at least 45 kilograms (99 pounds) of PCBs contained in PCB containers;
- Have one or more PCB transformers; and/or
- Have 50 or more PCB large high- or low-voltage capacitors.

The log must be prepared by July 1 and must include specific information for bulk PCB, PCB articles, PCB containers, and PCB article containers for the previous calendar year (January through December). All these records must be kept at least three years after the facility ceases use or storage of the PCBs.

Keep a copy of all manifests used to ship PCB wastes to storage or disposal facilities (with the transporter's signature) until you receive signed copies back from the storage or disposal facility. You should receive this copy within 30 days of delivery of the PCB waste. Keep the copy signed by the receiving facility for at least three years from the date of shipment, unless it is part of the annual records discussed above. Use the manifest required by the state where the storage or disposal facility is located. See 40 CFR 761, Subpart K for more details.

Notification Requirements

Not all generators need to notify U.S. EPA that they handle regulated PCBs, but all transporters and commercial storage and disposal companies do. A generator with a regulated PCB storage area as per 40 CFR Part 761.65(b) must notify U.S. EPA. A generator without a regulated PCB storage area that disposes waste PCBs within 30 days does not have to notify. A generator that keeps PCBs longer than 30 days must notify. U.S. EPA has two notification forms on the Internet—Notification of PCB Activity (Form 7710-53) and PCB Transformer Registration (Form 7720-12).

To notify, complete and submit the Notification of PCB Activity form (U.S. EPA Form 7710-53) if one has not already been sent to U.S. EPA or if your PCB activities have changed since it was last submitted. A generator will then obtain an identification number from U.S. EPA if they don't already have one. If the generator already has a U.S. EPA number assigned under the hazardous waste program (see *Hazardous Waste* in Chapter 2), U.S. EPA will confirm the use of this number under the Toxic Substances Control Act (TSCA) program. If companies do not have a U.S. EPA number assigned under another program, U.S. EPA will issue a number.

If a facility has PCB transformers, it must fill out the PCB Transformer Registration (U.S. EPA Form 7720-12). For the forms, visit U.S. EPA's Web site at www.epa.gov/pcbs/.

Storing PCB Articles

Different regulations apply to storing PCBs for reuse and storing PCB waste. PCB articles such as capacitors, transformers, electric motors, pumps, and other manufactured items can be stored in nonpermitted areas for reuse by the owner or facility operator, under specific conditions. Articles can be stored no more than five years after being removed from use or five years after August 28, 1998, whichever is later. If necessary to store longer, you must request an extension period from U.S. EPA or place the article in an area that meets specific design requirements or has a Resource Conservation and Recovery Act permit. Articles may be stored for use indefinitely if kept in an area that meets specific design requirements, such as having a roof, walls, and diking, or has a RCRA permit for managing hazardous waste. Discuss the specific storage design requirements with U.S. EPA, such as:

- Date the article was removed from service or August 28, 1998, if removal date is unknown.
- Projected location and future use of the article.
- Date of scheduled repair or servicing, if applicable.

You must also meet all the use requirements in 40 CFR 761.30, including marking requirements.

Areas for use and indoor storage of PCB-contaminated materials must be designed, constructed, maintained, and operated to prevent releases of polluting materials through sewers or drains, to a public sewer system, surface water, or ground water.

PCB wastes can also be manifested and sent to an approved storage facility before being disposed of. Be sure to allow enough time to transport the PCB waste from the storage facility to the disposal company and have the waste disposed of within the allowable one year time frame.

PCB Disposal

Disposal of PCB waste is regulated by U.S. EPA under TSCA. Any regulated PCB waste under TSCA must be disposed of within one year from the date it was determined to be a waste, unless U.S. EPA granted an extension. Regulated PCBs must be manifested and disposed of at an approved facility. The following information must appear on the manifest:

- Physical state (e.g., solid or liquid);
- Composition (e.g., soil, debris, capacitors, oil, etc.);
- Concentration in the material; and

- Quantity (although there is no specific unit of measure that must be used for PCB manifests, many facilities use kilograms because other PCB records or documents require kilograms to be used).

U.S. EPA has a list of PCB disposal facilities on the Internet. You should receive a Certificate of Disposal from the disposal facility within 30 days of the disposal completion date, unless a different time frame is identified in a contractual agreement between the generator and disposal facility. Bulk product waste includes some waste derived from manufactured products that are in a non-liquid state and have PCB concentrations greater than or equal to 50 parts per million, as well as debris from building demolition and other manmade structures that are PCB manufactured, coated, or serviced with PCBs.

For More Information

Environmental Emergencies	IDEM's 24-Hour Spill Reporting Hotline (317) 233-7745 or (888) 233-7745 (toll free nationwide) www.idem.IN.gov/4155.htm
Fire and Building Safety	Indiana Department of Homeland Security *Division of Fire and Building Safety* Plan Review Staff (317) 232-1431 www.IN.gov/dhs/2843.htm
Industrial Waste Compliance	IDEM - Office of Land Quality *Industrial Waste Compliance Section* (317) 308-3013 or (800) 451-6027, ext. 308-3013 www.idem.IN.gov/4996.htm
Solid Waste	U.S. Environmental Protection Agency Waste Web Site www.epa.gov/osw
Spill Response	National Response Center (800) 424-8802 www.nrc.uscg.mil/nrchp.html
Technical Compliance	IDEM - Office of Land Quality *Technical Compliance Section* (317) 308-3040 or (800) 451-6027, ext. 308-3040 www.idem.IN.gov/4110.htm